She made a diagnosis of sarcoma of the cord, and before death a large tumor appeared in the cervico-dorsal region. No autopsy was permitted.

DR. FREDERICK PETERSON stated that sarcoma in general were more common under the age of thirty than above that age.

THE PRESIDENT said that while sarcoma in general is more commonly met with in persons under the age of thirty, yet sarcoma in the nervous system is decidedly more frequent in adult life. He has recently collected six hundred cases of tumor of the brain (three hundred in adults and three hundred in children), and among these there were thirty-four cases of sarcoma in children and one hundred and fifty-seven in adults. He agreed with Dr. Sachs' statement that tumors of the spinal cord are very rare. He was much interested in the collection of cases made by Dr. Herter, and thought it would be well to carry the investigations further and determine how many of these cases would have been suitable for operative interference.

DR. GRÆME M. HAMMOND referred to the symptoms of Dr. Herter's patient on the side of the body opposite to that invaded by the growth. These, he thought, might have been due to degenerative changes in the opposite side of the cord, cause by a cutting off of the blood supply, or the commissure fibres may have been interfered with enough to produce the symptoms.

The discussion was then closed by Dr. Herter. He stated that there was only partial interference with the nutrition of the opposite side of the cord. As regards operation, he did not see the case until a very late day, and it seemed to him that it was not an operation case. The patient had been seen by an eminent neurologist of this city during its earlier stages, and had been treated by electricity with the idea that the trouble was a neuralgic one.

DISCUSSION ON THE MOTOR DISTURBANCES OF THE HEART OF NERVOUS ORIGIN.

DR. GEORGE W. JACOBY read the first paper on this subject. He stated that in a large number (probably in more than one-half) of the persons who consult us on account of some motor disorder of the heart, no anatomical lesion is clinically discoverable, and no mechanical cause can be found. In such cases it is reasonable to seek for the cause of the altered function in some disorder of the complicated nervous apparatus of the heart. The subject may be conveniently divided into intermittent, irregular, abnormally slow (bradycardia) and abnormally frequent (tachycardia) heart's action.

Intermittency may be true or false; in the latter form the pulse fails, but the heart is regular, while in the former the heart beat is actually dropped. In irregularity of the heart's action the number of pulsations varies from minute to minute, or the pulsations vary in height and tension. These forms of arythmia may be persistent or only temporary; when persistent, Dr. Jacoby said, they are probably due to some organic disease of the heart, whether such can be detected or not; when they are temporary, they are either dependent upon defective blood mixture or are purely neurotic. Toxic influences associated with sexual excesses, and with the excessive use of tea, coffee, tobacco and alcohol he has found to be potent in the production of arythmias. Intermittency may be due to even the moderate use of alcohol.

Slow pulse, or bradycardia is a term applied in cases where the pulse falls below sixty per minute, or according to other writers, below forty. Slow pulse should be regarded as a symptom only and may be due to a variety of causes. If we make use of the term bradycardia at all, we should limit it to such cases in which the infrequency of the pulse is due to a disorder of innervation. A slight reduction in the frequency of the pulse is very common in disturbances of the digestive tract.

In paroxymal tachycardia the attack is always sudden in its onset and usually unexpected. The pulse is increased from normal to 180–240 per minute, or even to 300 per minute, according to some observers. There is no irregularity of rhythm nor intermittence. The heart beats in a strong and energetic manner, and in direct contrast to its action is the extreme diminution of arterial tension. The cessation of the attack is sudden as its onset. The paroxysms vary in duration from a few minutes to several hours, and occasionally last even for days. The intervals between the attacks are irregular. During an attack the excretion of urine is generally diminished; it may be followed by the presence of a large quantity of clear, limpid urine. The etiology of these cases is obscure. Psychic influences, fright, error of diet, bodily exertion have all been assigned as causes. It is an affection of adult life, this we can say positively, and the best established causes are bodily and cerebral overwork.

In concluding his paper, Dr. Jacoby referred to the pathology of these cases, and gave a brief review of the various theories put forth regarding the nervous mechanism of the heart. The assumption that we are dealing with a bulbar neurosis in these cases appeared to him to be the most probable one.

Dr. J. W. Brannan said that some years ago, when he was led to investigate the subject of the pathology of tachycardia, he was inclined to believe that it was due to a bulbar neurosis, but he afterwards rather favored the suggestion made by West, to which Dr. Jacoby referred, that the cause of the trouble was to be found in the heart muscles. Up to four years ago only four autopsies were recorded, and in all of these the nervous system was found intact; in only two the heart muscles were examined, and in both cases an extensive development of fibrous tissue was found in the wall of the left ventricle. This, as some observers have said, may have been due to the rapid heart action. In another case where the disease existed only three months there was an extensive development of fibrous tissue throughout the wall of the left ventricle, in the trabeculæ and the papillary muscles. The only objection to that theory lies in the fact that there are so many cases of myocarditis without any history of tachycardia. This has been accounted for by the explanation that certain regions of the heart muscles are tolerant, while other regions are intolerant, and with the latter we get tachycardia. The intolerant regions are especially found in the intraventricular wall and the papillary muscles.

Dr. Mary Putnam Jacobi referred to Gaskell's experiments in connection with this subject. She stated that the suggestion made that an apparently functional disorder may constitute the precursor to a more serious condition, seemed to her extremely interesting and important. Such a case was recently brought to her observation. The patient was a woman who, for three years, during the period of the monopause, was supposed to be very hysterical. She suffered from insomnia, night terrors and other symptoms that were considered purely neurasthenic, as no organic disease was found. She finally had an attack of hemorrhage in the pons.

Dr. Herter referred to a case of paroxysmal tachycardia which he has had under observation for two years. The man is a sexual neurasthenic and suffers from intestinal indigestion. Each attack lasts four or five hours and is generally induced by some indiscretion of diet. The urine passed after such an attack contains in a large amount the products of intestinal putrefaction. It is an interesting question whether the attacks are due to such poisonous substances, or perhaps to mechanical causes—such as the distention of the colon or other parts of the intestinal tract.

DR. A. D. ROCKWELL said he is of the opinion that functional diseases of the heart sometimes lead up to organic diseases, but not very often. These functional heart troubles ofttimes give more misery than a serious organic disease. If we have a disturbed rhythm of the heart which is paroxysmal in character, with intervals of normal pulse beat, the condition is apt to be a functional one, and per contra, where the rhythmic disturbance is constant and associated with profound circulatory interference, which is evidenced by syncope or vertigo, we are pretty safe in diagnosing an organic disease.

DR. LESZYNSKY stated that he saw three attacks of tachycardia in a young physycian. Each of these attacks was brought on by an over-indulgence in alcohol and tobacco. The pulse rate varied from 180 to 200, and each attack lasted for two or three days. The patient has had no attack now for five years. As regards slow pulse, Dr. Leszynsky said he is acquainted with two persons, both members of the same family, in whom that symptom is very pronounced.

DR. L. STEIGLITZ referred to a marked case of totany he had seen in Dr. Hoffman's clinic at Heidelberg. The patient was a girl aged eighteen who developed attacks of tachycardia, with the pulse ranging from 180 to 220. He stated that with totany there is often associated diseases of the thyroid gland, and this is also the case in Baoedow's disease, where we have the rapid pulse. The tachycardia may possibly be due to some toxic influence of the blood.

DR. SACHS gave the history of a case of tachycardia and two cases of bradycardia.

The discussion was then closed by Dr. Jacoby.